

TRANSLATION **PATENT COOPERATION TREATY**
PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P36585-P0	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2005/004821	International filing date (<i>day/month/year</i>) 17.03.2005	Priority date (<i>day/month/year</i>) 26.03.2004
International Patent Classification (IPC) or national classification and IPC H01M10/06, H01M2/16, H01M4/23, H01M4/73, H01M10/42		
Applicant. Matsushita Electric Industrial Co., Ltd.		

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of 2 sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>																	
<p>4. This report contains indications relating to the following items:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/></td> <td style="width: 85%;">Box No. I Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII Certain observations on the international application</td> </tr> </table>		<input checked="" type="checkbox"/>	Box No. I Basis of the report	<input type="checkbox"/>	Box No. II Priority	<input type="checkbox"/>	Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI Certain documents cited	<input type="checkbox"/>	Box No. VII Certain defects in the international application	<input type="checkbox"/>	Box No. VIII Certain observations on the international application
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Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- This report is based on translations from the original language into the following language _____ which is the language of a translation furnished for the purposes of:
- international search (Rule 12.3 and 23.1(b))
 publication of the international application (Rule 12.4)
 international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):
- the international application as originally filed/furnished
 the description:
 pages 1-20 as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
- the claims:
 nos. 2-10 as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* 1, 11 received by this Authority on 24.10.2005
 nos.* _____ received by this Authority on _____
- the drawings:
 sheets fig. 1-6 as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
- a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:
- the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
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1. Statement

Novelty (N)	Claims	1-11	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	1-11	NO
Industrial applicability (IA)	Claims	1-11	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

Document 1: JP 2000-195524 A (Matsushita Electric Industrial Co., Ltd.), 14 July 2000, paragraphs [0011] to [0021]

Document 2: JP 2003-142151 A (Japan Storage Battery Co. Ltd.), 16 May 2003, entire text and fig. 1 to 4

Document 3: JP 2003-346790 A (Matsushita Electric Industrial Co., Ltd.), 05 December 2003, claims and paragraphs [0017] to [0021]

Document 4: JP 64-60969 A (Shin-Kobe Electric Machinery Co., Ltd.), 08 March 1989, entire text and fig. 1 to 2 & FR 2619961 A1 & DE 3829258 A1 & GB 2209241 A

Document 5: JP 63-244568 A (Shin-Kobe Electric Machinery Co., Ltd.), 12 October 1988, claims

Document 6: DE 3928468 A1 (Grace GmbH), 14 March 1991, claims & JP 3-93155 A & EP 0425784 B1 & US 6403264 B1

Document 7: JP 10-31991 A (Nippon Mukai Co., Ltd.), 03 February 1998, claims and paragraphs [0004] to [0005]

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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The inventions set forth in claims 1 to 2 and 11 do not involve an inventive step in the light of documents 1 to 3 cited in the international search report. It would have been easy for a person skilled in the art to conceive of applying the well-known technical feature disclosed in document 2, wherein the battery case of a lead battery in which a part of the positive plate and a part of the negative plate have been immersed in an electrolyte on the interior of a battery case is sealed for storage, and the well-known technical feature disclosed in document 3, wherein the lattices of the positive plate and the negative plate of a lead battery are both configured from a Pb-Ca alloy, in the lead battery disclosed in document 1, wherein a cathode plate obtained by retaining a cathode active material in a cathode lattice that comprises a Pb alloy, an anode plate obtained by retaining an anode active material in an anode lattice that comprises a Pb alloy, a separator for isolating these plates and an electrolyte that comprises sulfuric acid are all housed within a battery case in a manner such that a part of the positive plate and a part of the negative plate are immersed in the electrolyte. When sealing said battery case for storage, a person skilled in the art could determine an appropriate height for the surface of the electrolyte solution within the battery case by means of experimentation.

The invention set forth in claim 3 does not involve an inventive step in the light of documents 1 to 3 cited in the international search report. When applying the well-known technical features disclosed in documents 2 to 3 in the lead battery disclosed in document 1, a person skilled in the art could easily delimit an appropriate

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concentration for the sulfuric acid that is housed within the battery case of the lead battery as an electrolyte.

The invention set forth in claim 4 does not involve an inventive step in the light of documents 1 to 5 cited in the international search report. It would have been easy for a person skilled in the art to apply the well-known technical feature disclosed in documents 4-5, wherein a sulfate of an alkali metal or a sulfate of an alkaline earth metal is added to the electrolyte that is housed within the battery case of a lead battery, in the lead battery disclosed in document 1.

The inventions set forth in claims 5 and 8 do not involve an inventive step in the light of documents 1 to 3 cited in the international search report. Document 3 discloses a lead battery wherein the negative plate is housed within a saccate separator that is configured from a polyethylene.

The inventions set forth in claims 6 to 7 do not involve an inventive step in the light of documents 1 to 3 and 6 to 7 cited in the international search report. Lead batteries wherein a separator configured from a polyethylene also includes 10 to 30% by weight of an oil component are well known, as disclosed in documents 6 to 7.

The invention set forth in claim 9 does not involve an inventive step in the light of documents 1 to 3 cited in the international search report. Document 1 discloses a feature wherein a layer of a Pb alloy that includes Sn is provided upon the surface of the cathode lattice.

The invention set forth in claim 10 does not involve an inventive step in the light of documents 1 to 3 cited in the international search report. When applying

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the well-known technical features disclosed in documents 2 to 3 in the lead battery disclosed in document 1, a person skilled in the art could easily displace the gas phase on the interior of the battery case with an inert gas.